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10/734,691	12/11/2003	Tinku Acharya	42P14995	1187

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EXAMINER

PATEL, NIRAV B

ART UNIT	PAPER NUMBER
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2135

MAIL DATE	DELIVERY MODE
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10/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/734,691

Applicant(s)

ACHARYA ET AL.

Examiner

Nirav Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment filed on July 24, 2007 has been entered. Claims 1-36 are pending. Claims 1-36 are amended by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5, 10, 14, 19, 20, 23, 28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No. 6,614,914) and in view of Hayashi (Patent No. 7,187,781).

As per claim 1, Ahmed teaches:

partitioning a cover image into blocks [Fig. 1, block 102]; generating a key; inserting a watermark symbol into the cover image utilizing the key [Fig. 1, col. 2 lines 25-50]; and extracting the watermark symbol from the cover image utilizing and the key [Fig. 2, col. 3 lines 38-67].

Ahmed teaches watermark techniques to embed and extract the watermark symbol into/from the cover image [Fig. 1, 2]. Ahmed doesn't expressively mention a Walsh transform.

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Rhoads teaches inserting/extracting watermark into/from the image utilizing a Walsh transform [col. 10 lines 24-26, Fig. 1, col. 37 lines 35-53]. Further, Rhoads teaches partitioning the cover image into non-overlapping blocks [Fig. 1, 9].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Rhoads with Ahmed, since one would have been motivated to provide copy protection to the digital content/media [Rhoads, col. 2 lines 53-54, col. 5 lines 25-30].

Ahmed and Rhoads teach the watermark techniques as above.

Hayashi teaches spatially dispersing the watermark symbol utilizing the key and inserting the spatially dispersed watermark symbol into the image [Fig. 1, 2, 6].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Hayashi with Ahmed, Rhoads and Sharma, since one would have been motivated to provide copy protection to the digital content/media [Hayashi, col. 1 line 25].

As per claim 2, the rejection of claim 1 is incorporated and Rhoads teaches generating the key includes generating a pseudo-random number [col. 38 lines 5-7].

As per claim 5, the rejection of claim 1 is incorporated and Ahmed teaches partitioning the cover image [Fig. 1 col. 3 line 43].

Rhoads teaches partitioning the cover image into non-overlapping blocks of equal size [Fig. 1, 9].

As per claim 10, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 14, the rejection of claim 10 is incorporated and it encompasses limitations that are similar to limitations of claim 5. Thus, it is rejected with the same rationale applied against claim 5 above.

As per claim 19, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 20, the rejection of claim 19 is incorporated and it encompasses limitations that are similar to limitations of claim 2. Thus, it is rejected with the same rationale applied against claim 2 above.

As per claim 23, the rejection of claim 19 is incorporated and it encompasses limitations that are similar to limitations of claim 5. Thus, it is rejected with the same rationale applied against claim 5 above.

As per claim 28, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

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As per claim 32, the rejection of claim 28 is incorporated and it encompasses limitations that are similar to limitations of claim 5. Thus, it is rejected with the same rationale applied against claim 5 above.

3. Claims 3 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No. 6,614,914) in view of Hayashi (Patent No. 7,187,781). and in view of Gerheim et al (US Pub. No. 2003/0026422).

As per claim 3, the rejection of claim 2 is incorporated and Rhoads teaches the key [Fig. 1].

Rhoads doesn't expressively mention a private key.

Gerheim teaches the key is a private key [Fig. 1 -- 14, paragraph 0074 lines 1-2].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Gerheim with Ahmed, Rhoads and Hayashi, since one would have been motivated to identify unauthorized copy of the video [Gerheim, paragraph 0001, lines 3-4].

As per claim 21, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 3. Thus, it is rejected with the same rationale applied against claim 3 above.

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4. Claims 4, 13, 22 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No. 6,614,914) in view of Hayashi (Patent No. 7,187,781) and in view of Vora (US Patent No. 6,463,162).

As per claim 4, the rejection of claim 1 is incorporated and Rhoads teach the watermark symbol [Fig. 1-3].

Vora teaches the watermark symbol is a logo [col. 2 lines 58-61].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Vora with Ahmed, Rhoads and Hayashi, since one would have been motivated to identify or authenticate the digital content and provide the copyright protection [Vora, col. 1 lines 15-19].

As per claim 13, the rejection of claim 10 is incorporated and it encompasses limitations that are similar to limitations of claim 4. Thus, it is rejected with the same rationale applied against claim 4 above.

As per claim 22, the rejection of claim 19 is incorporated and it encompasses limitations that are similar to limitations of claim 4. Thus, it is rejected with the same rationale applied against claim 4 above.

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As per claim 31, the rejection of claim 28 is incorporated and it encompasses limitations that are similar to limitations of claim 4. Thus, it is rejected with the same rationale applied against claim 4 above.

5. Claims 6-9, 15-18, 24-27 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No. 6,614,914) and in view of and in view of Hayashi (Patent No. 7,187,781) and Sharma et al (US Pub. 2002/0057823).

As per claim 6, the rejection of claim 5 is incorporated and Sharma teach:

defining blocks having small variance values as homogenous blocks; and defining blocks having mid-variance values as mid-variance blocks [Fig. 2, 3, 7, paragraph 0041, 0035].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Sharma with Ahmed, Rhoads and Hayashi, since one would have been motivated to provide copy protection to the digital content/media [Rhoads, col. 2 lines 53-54, col. 5 lines 25-30].

As per claim 7, the rejection of claim 6 is incorporated and Sharma teach selecting homogenous blocks and mid-variance blocks [Fig. 2, 3, paragraph 0035, 0041].

As per claim 8, the rejection of claim 7 is incorporated and Rhoads teaches:

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inserting the watermark symbol into the cover image utilizing a Walsh transform [Fig. 1].

Hayashi teaches:

inserting bits of the spatially dispersed watermark symbol into the homogenous and mid-variance blocks of the cover image [Fig. 6, 8, 10, col. 9 lines 5-15].

As per claim 9, the rejection of claim 8 is incorporated and Rhoads teaches:

extracting watermark symbol from the image utilizing a Walsh transform and the key [col. 10 lines 24-26, Fig. 1, col. 37 lines 35-53].

Hayashi teaches extracting bits of the spatially dispersed watermark symbol from the homogenous and mid-variance blocks of the cover image utilizing the key [Fig. 10, 13, col. 7 lines 47-53].

As per claim 15, the rejection of claim 14 is incorporated and it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

As per claim 16, the rejection of claim 15 is incorporated and it encompasses limitations that are similar to limitations of claim 7. Thus, it is rejected with the same rationale applied against claim 7 above.

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As per claim 17, the rejection of claim 16 is incorporated and it encompasses limitations that are similar to limitations of claim 8. Thus, it is rejected with the same rationale applied against claim 8 above.

As per claim 18, the rejection of claim 17 is incorporated and it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above.

As per claim 24, the rejection of claim 23 is incorporated and it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

As per claim 25, the rejection of claim 24 is incorporated and it encompasses limitations that are similar to limitations of claim 7. Thus, it is rejected with the same rationale applied against claim 7 above.

As per claim 26, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 8. Thus, it is rejected with the same rationale applied against claim 8 above.

As per claim 27, the rejection of claim 26 is incorporated and it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above.

As per claim 33, the rejection of claim 32 is incorporated and it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

As per claim 34, the rejection of claim 33 is incorporated and it encompasses limitations that are similar to limitations of claim 7. Thus, it is rejected with the same rationale applied against claim 7 above.

As per claim 35, the rejection of claim 34 is incorporated and it encompasses limitations that are similar to limitations of claim 8. Thus, it is rejected with the same rationale applied against claim 8 above.

As per claim 36, the rejection of claim 35 is incorporated and it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above.

6. Claims 11 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No.

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6,614,914) and in view of Hayashi (Patent No. 7,187,781) and in view of De Lanauze et al (US Pub No. 2003/0140232).

As per claim 11, the rejection of claim 10 is incorporated and Rhoads teaches generating the key includes generating a pseudo-random number [col. 38 lines 5-7].

De Lanauze teaches the pseudo-random number utilizing a shift-register circuit [paragraph 0005 lines 7-9]

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine De Lanauze with Ahmed, Rhoads and Hayashi, since one would have been motivated to provide copy protection to the digital content/media [Rhoads, col. 2 lines 53-54, col. 5 lines 25-30].

As per claim 29, the rejection of claim 28 is incorporated and it encompasses limitations that are similar to limitations of claim 11. Thus, it is rejected with the same rationale applied against claim 11 above.

7. Claims 12, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed (US Patent No. 6,512,837) in view of Rhoads et al (US Patent No. 6,614,914) and in view of Hayashi (Patent No. 7,187,781) in view of De Lanauze et al (US Pub No. 2003/0140232) and in view of Gerheim et al (US Pub. No. 2003/0026422).

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As per claim 12, the rejection of claim 11 is incorporated and Rhoads teaches the key [Fig. 1].

Rhoads doesn't expressively mention a private key.

Gerheim teaches the key is a private key [Fig. 1 -- 14, paragraph 0074 lines 1-2].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Gerheim with Ahmed, Rhoads, Hayashi and De Lanauze, since one would have been motivated to identify unauthorized copy of the video [Gerheim, paragraph 0001, lines 3-4].

As per claim 30, the rejection of claim 29 is incorporated and it encompasses limitations that are similar to limitations of claim 12. Thus, it is rejected with the same rationale applied against claim 12 above.

Response to Argument

8. Applicant's arguments filed July 24, 2007 have been fully considered but they are not persuasive.

Regarding to the applicant's arguments that Rhoads does not describe, teach or suggest a *Walsh transform*. Ahmed teaches the watermark technique for inserting and extracting watermark into/from the image as shown in Figs. 1 and 2. Further, Ahmed discloses the watermark encoder and the watermark decoder such as the method

described in application 09/503881 (US Patent No. 6,614,914) [col. 2 lines 30-32, col. 3 lines 45-47]. The US Patent No. 6,614,914 (Rhoads et al.) is related to digital watermarking of media content. The invention provides watermark structures, and related embedders and readers for processing the watermark structures. Further, Rhoads discloses that digital watermarking processes are described in terms of the transform domain or spatial domain or temporal domain or some other transform domain such as a wavelet transform, Discrete Cosine Transform (DCT), Discrete Fourier Transform (DFT), **Hadamard transform**, Hartley transform, Karhunen-Loeve transform (KLT) domain, etc. [col. 10 lines 24-26]. However, the hadamard transform is a generalized class of Fourier transforms. It performs an orthogonal, symmetric, involuntary, linear operation on 2^m real numbers. The Hadamard transform can be regarded as being built out of size-2 discrete Fourier transforms (DFTs), and is in fact equivalent to a multidimensional DFT of size. It decomposes an arbitrary input vector into a superposition of **Wash function**. The Hadamard transform is same as the Walsh-Hadamard transform or the Walsh transform or the Walsh-fourier transform. Therefore, the watermark technique disclosed by Rhoads teaches the Walsh transform. Further, Hayashi's invention relates to method and apparatus for embedding and extracting the watermark in/from the picture utilizing a key information as shown in Figs 1 and 10. Therefore, the combination of Ahmed, Rhoads and Hayashi teaches the claim limitation "...inserting the spatially dispersed watermark symbol into the cover image utilizing a Walsh transform...". It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to

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the particular problem with the applicant was concerned, in order to be relied upon as basis for rejection of the claimed invention. See *In re Ortiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). Furthermore, the examiner recognizes that obviousness can only be established by combining or modifying the teaching of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ 2nd 1941 (Fed. Cir 1992). In this case the combination of Ahmed, Rhoads and Hayashi teaches the claim subject matter and the combination is sufficient.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakayama (US 7188132) --- Hadamard transformation method and apparatus

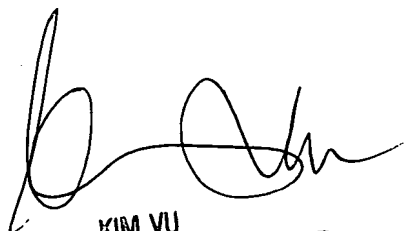
Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav Patel whose telephone number is 571-272-5936. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

NBP**10/2/07**

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100